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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

YAMNITZKY, MARIE ROSE

ART UNIT

PAPER NUMBER

1786

MAIL DATE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/572,660	Applicant(s) TAKA ET AL.	
	Examiner Marie R. Yamnitzky	Art Unit 1786	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-10 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-10 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. This Office action is in response to applicant's amendment filed May 27, 2011, which amends claim 6, cancels claims 1-3 and 11-16, and adds claim 17.

Claims 6-10 and 17 are pending.

2. The following rejections are rendered moot by claim cancellation:

the rejection of claims 11, 12 and 15 under 35 U.S.C. 102(b) as anticipated by Tomiuchi et al. (GB 2 357 180 A);

the rejection of claims 11, 12 and 15 under 35 U.S.C. 102(e) as anticipated by Kawaguchi et al. (US 2004/0051781 A1);

the rejection of claims 1-3 and 11-16 under 35 U.S.C. 102(b) as anticipated by Bellmann et al. (US 2003/0068525 A1);

the rejection of claims 1, 2, 11-13, 15 and 16 under 35 U.S.C. 102(e) as anticipated by Kitano et al. (US 2004/0109955 A1); and

the rejection of claims 3 and 14 under 35 U.S.C. 103(a) as unpatentable over Kitano et al. (US 2004/0109955 A1).

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear if the solution of the multi-branched structure compound that is coated per the method of claim 17 includes an Ir phosphorescent compound.

5. The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

Subject to the [fifth paragraph of 35 U.S.C. 112], a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

6. Claim 17 is rejected under 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends.

Claim 17 refers to “the multi-branched structure compound of claim 6”, but claim 6 is not drawn to a multi-branched structure compound. Claim 6 is drawn to an organic electroluminescent element. Claim 17 is not a proper dependent claim because it refers to only a portion of the subject matter of claim 6.

Applicant may cancel the claim(s), amend the claim(s) to place the claim(s) in proper dependent form, rewrite the claim(s) in independent form, or present a sufficient showing that the dependent claim(s) complies with the statutory requirements.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 6-10 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Bellmann et al. (US 2003/0068525 A1).

See the entire publication. In particular, see paragraphs [0002], [0005], [0021], [0026]-[0031], [0040]-[0060], [0071]-[0072] and [0134].

Bellmann et al. disclose various compounds that meet the limitations of a multi-branched structure compound per the present claims (e.g. see paragraphs [0047]-[0060]).

Bellman et al. disclose various structures within the scope of the core linkage group of the multi-branched structure compound as required for present claims 6-10 and 17. For example, tetraphenylmethanes of formula 1 on page 5 include the present C-9 structure, dendrimeric triphenylamines as taught in paragraph [0054] include the present C-10 structure, and the dendrimer compounds taught in paragraph [0056] include compounds which comprise the present C-2 structure. In addition, given that present claim 6 does not limit what is present at each of the asterisks in the depicted structures, Bellman's disclosure also meets the limitations of

at least the present C-1 structure because a phenylene group is a component of many of Bellman's compounds having a multi-branched structure.

Bellmann et al. disclose these compounds for use as an amorphous, non-polymeric, organic matrix, in combination with a light emitting material, to form the light emitting layer of an organic electroluminescent device. The organic electroluminescent device comprises at least the light emitting layer disposed between a pair of electrodes (an anode and a cathode) as per present claim 6 and dependents. In the process of making the device, the components of the light emitting layer are combined in the form of a solution as per claim 17.

Exemplary light emitting materials include phosphorescent compounds as per present claim 6 (e.g. the cyclometallated iridium compounds taught in paragraph [0072]; paragraph [0045] also explicitly teaches "triplet emitters", which is alternative terminology for phosphorescent compounds).

With respect to present claims 7-10, see paragraphs [0028]-[0029] for example.

9. Claims 6, 8-10 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Kitano et al. (US 2004/0109955 A1).

See the entire publication. In particular, see paragraphs [0010]-[0016], [0089]-[0091], [0117]-[0118], [0136], [0139], [0186]-[0210] and [0282]-[0284].

Kitano et al. disclose polymer compounds for use in the light emitting layer of an organic light emitting device comprising at least an organic light emitting layer disposed between an anode and a cathode (e.g. see paragraph [0191]). Various polymer structures are disclosed

within the scope of Kitano's formula (1) or formula (2) that meet the limitations of a multi-branched structure compound as required by the present claims.

Kitano et al. disclose structures within the scope of the core linkage group of the multi-branched structure compound as required for present claim 6 and dependents. For example, all of Kitano's polymer compounds having Kitano's formula (1) or formula (2) structure include the present C-10 structure. Each of the exemplary repeating units set forth in paragraphs [0089]-[0090] and [0117] also include the present C-1 structure, and some of these repeating units also include the present C-2 structure. (Other structures such as the present C-7 or C-9 structures can be considered to be met by the prior art repeating units containing alkyl groups such as Me or Bu since present claim 1 does not limit what is present at each of the asterisks in the depicted structures).

The polymer may be mixed with a light emitting material that is a phosphorescent compound as per present claim 6 (e.g. see paragraphs [0193]-[0200]; paragraph [0199] provides two specific examples of phosphorescent Ir compounds as required by claim 6 and dependents).

Kitano's polymer compounds are taught as being soluble in various solvents, and a layer comprising the polymer may be formed by dissolving the polymer and any other desired components, such as light emitting material, in a solvent (e.g. see paragraphs [0139] and [0204]-[0205]).

With respect to present claims 8-10, see paragraph [0187] for example.

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10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitano et al. (US 2004/0109955 A1) as applied to claims 6, 8-10 and 17 above, and for the further reasons set forth below.

Kitano et al. do not explicitly teach a device emitting white light, but teach that the light emitting device may be used for various purposes such as a “back light of a liquid crystal display, a light source of curved or flat surface for lighting” (paragraph [0187]). These are purposes for which a device emitting white light would be desirable. Further, Kitano et al. teach various light emitting materials that may be used in combination with Kitano’s polymer in the light emitting layer of the device, and it was well-known in the art at the time of the invention that white light emission can be achieved by selective combination of different light emitting materials in a single layer, or by providing a device with multiple light emitting layers which, in combination, are capable of providing white light emission. It would have been within the level of ordinary skill of a worker in the art to provide a white light emitting device utilizing Kitano’s multi-branched polymer structure in combination with one or more light emitting materials, and one of ordinary skill in the art would have been motivated to do so when the device was intended to be used for a purpose in which white light emission was desirable.

12. Applicant's arguments filed May 27, 2011 have been fully considered but they are not persuasive with respect to the patentability of the present claims over the Bellmann et al. or Kitano et al. references.

Applicant argues that "encapsulation" indicates formation of a new molecule having a molecular weight of the two components (the encapsulating compound plus the compound that is encapsulated). Applicant argues that encapsulation is not the same as a weak interaction of two molecules, and that encapsulation is not achieved simply by mixing the two components in a solvent. Applicant argues that these two references are silent with respect to encapsulation methods, and encapsulation is not inherent.

Each reference discloses materials within the scope of the presently required multi-branched structure compound and materials within the scope of the presently required Ir phosphorescent compound. Each reference teaches forming a layer by solution coating. Bellmann et al. teach that the materials to be used in combination are preferably "compatible or soluble in a common solvent or solvents and do not substantially phase separate during solution coating and, more preferably, do not phase separate upon removal of the solvent(s)" (see paragraph [0041]. Kitano et al. teach the use of solvents "which can dissolve or disperse the materials...in the solvent uniformly" (see paragraph [0209]). While applicant argues that simply mixing the components together does not inherently result in encapsulation, the present specification teaches that encapsulation can be achieved "in a uniform solution" using a solvent that dissolves both components, with the affinity of the two components being higher than the affinity between either of the two components and the solvent (present specification pages 72-

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73). Given the teachings of Bellmann et al. and Kitano et al., the examiner maintains the position that these prior art references anticipate the presently claimed subject matter.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

14. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 7:00 a.m. to 3:30 p.m. Monday and Wednesday-Friday.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

/Marie R. Yamnitzky/
Primary Examiner, Art Unit 1786

MRY
July 18, 2011